

**REMARKS**

Claim 26 is currently being amended to obviate the indefiniteness rejection issued by the Examiner. Additionally, new claims 28 and 29 are currently being added. Basis for new claims can be found throughout Applicant's specification, including page 2, line 1.

The amendments presented herein do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, the Examiner is respectfully requested to enter the amendments.

**1. Rejection of Claim 26 Under 35 U.S.C. §112, 2<sup>nd</sup> Paragraph**

Applicant has amended claim 26 to obviate the instant rejection. Accordingly, Applicant respectfully requests the rejection to be withdrawn.

**2. Rejection of Claims 14-27 Under 35 U.S.C. §103(a) to WO**

**03/051984 in view of U.S. Patent 5,145,819**

Applicant respectfully traverses the rejection of claims 14-27 as being unpatentable under 35 U.S.C. §103(a) with respect to WO 03/051984 (herein referred to as, "Pelliconi, et al. II") in view of U.S. Patent 5,145,819 (herein referred to as, "Winter, et al.>").

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2)

ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

Arguments regarding Pelliconi, et al. II in Applicant's previous response of January 9, 2009 are incorporated herein by reference in their entirety.

First and foremost, with respect to the instant rejection, Applicant is currently claiming propylene polymer compositions comprising, in part, a specific propylene homopolymer or propylene copolymer as component (a); a specific ethylene copolymer as component (b); and a specific propylene/ethylene copolymer as component (c), wherein component (b) is present in a specific weight ratio, and component (c) is obtained by using at least one metallocene compound of formula (I) or (II). In fact, as outlined in Applicant's specification on page 1, lines 2-3 and 26-27,

The present invention relates to a propylene polymer composition having improved impact-stiffness balance.

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The applicant has surprisingly found that the impact-stiffness balance in a propylene composition can be further improved.

Accordingly, as noted in Applicant's specification, the currently claimed propylene polymer compositions unexpectedly comprise a better impact-stiffness balance.

In particular, the currently claimed propylene polymer compositions comprise a better impact-stiffness balance since component (a), the propylene homopolymer or copolymer present from 50% to 90% by weight comprises, at the very least, a polydispersity index greater than 3. This is exemplified by Examples 2, 4, and 5 versus Comparative Examples 1 and 3 in Table 3 in Applicant's specification. In particular, Comparative Example 1 comprises 70% of component a-1 as component (a), which has a polydispersity index less than 3 (i.e., 2.4), while Example 2 comprises 70% of component a-2 as component (a), which has a polydispersity index greater than 3 (i.e., 3.8). Accordingly, Example 2 has much higher Young modulus, chord modulus, Izod at -30 °C, and Izod at -40 °C values than Comparative Example 1. Similarly, unexpected results can be seen with Comparative Example 3 with respect to Examples 4 and 5, albeit with 80% of their respective component (a) present. However, Pelliconi, et al. II and Winter, et al. are both completely silent

in this regard (i.e., that the impact-stiffness of propylene polymer compositions can be improved by using 50% to 90% by weight of propylene homo- and co- polymers having a polydispersity index greater than 3). In fact, Pelliconi, et al. II mainly deals with producing polyolefin compositions with improved optical and whitening properties, while Winter, et al. mainly relates to 2-substituted bisindenyl metallocenes. Accordingly, for this reason alone, Applicant respectfully believes the instant rejection should be withdrawn.

Notwithstanding the above, in the instant Office Action the Examiner states on page 4, line 1 - page 5, line 3; and page 6, lines 1-5,

Pelliconi specifically teaches that the bridged bis-indenyl metallocene catalysts disclosed by Winter, US5145819, may be used in the production of the components of the polymer composition of WO 03/051984 (Page 5, lines 26-29). As Winter is explicitly cited, the examiner takes the position that it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to modify the polymer composition disclosed by Pelliconi by using the bridged bis-indenyl metallocene catalyst taught by Winter for the polymerization of the polymer components with the reasonable expectation of preparing a polymer composition having the balance of processability, mechanical properties, and optical properties disclosed by Pelliconi (Page 1, lines 6-8).

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Applicant is therefore required to provide factual evidence demonstrating that the properties used to define the polymer compositions of the instant application would not be present in the composition rendered obvious by the combination of Pelliconi and Winter.

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As noted above, Pelliconi explicitly states that the bridged bis-indenyl metallocene catalysts disclosed by Winter are suitable for use in the preparation of the components of the polymer composition of WO 03/051984. It would therefore have been obvious to one of ordinary skill in the art to use such a catalyst in practicing the invention of WO 03/051984.

However, Applicant respectfully traverses the Examiner's reasoning outlined in the above-captioned portions of the instant Office Action. First and foremost, as previously noted in Applicant's previous response of January 9, 2009, Pelliconi, et al. II discloses polyolefin compositions comprising components 1) and 2), wherein components 1) and 2) are prepared by Ziegler-Natta catalysts. In fact, page 3, lines 25-30 of Pelliconi, et al. II discloses,

Such polymerization is preferably carried out in the presence of stereospecific **Ziegler-Natta catalysts**. An **essential component** of said catalysts is a solid catalyst component comprising **a titanium compound having at least one titanium-halogen bond**, and an electron-donor compound, both supported on a magnesium halide in active form. Another essential component (co-catalyst) is an organoaluminum compound, such as an aluminum alkyl compound. (Emphasis added)

Accordingly, Pelliconi, et al. II discloses the polyolefin compositions are preferably obtained by using a Ziegler-Natta catalyst for producing each individual component. This is further evidenced by the fact that all thirteen (13) working examples in Pelliconi, et al. II are produced used a Ziegler-Natta catalyst.

Alternatively, as noted by the Examiner, Pelliconi, et al. II

also discloses other catalysts "may" be used. In fact, the full disclosure in Pelliconi, et al II regarding the other catalysts states,

Other catalysts that may be used in the process according to the present invention are metallocene-type catalysts, as described in USP 5,324,800 and EP-A-0 129 368; particularly advantageous are bridged bis-indenyl metallocenes, for instance as described in USP 5,145,819 and EP-A-0 485 823. Another class of suitable catalysts are the so-called constrained geometry catalysts, as described in EP-A-0 416 815 (Dow), EP-A-0 420 436 (Exxon), EP-A-0 671 404, EP-A-0 643 066 and WO 91/04257. These metallocene compounds may be used in particular to produce the copolymers (a) and (b).

However, to begin with, Applicant respectfully believes the Examiner has not explained *why*, absent Applicant's specification and currently pending claims, one of ordinary skill in the art would have selectively plucked the currently relied upon metallocene compounds of Winter, et al. from the myriad of "other catalysts" that "may" be used from the disclosure of Pelliconi, et al. II. In fact, various "other" catalyst types are described in this section of Pelliconi, et al. II, including those that clearly fall outside the metallocene compounds of formula (I) and (II). In this regard, the Examiner has not addressed *why* one would have selectively plucked the relied upon metallocenes of Winter, et al. from the myriad of other catalysts disclosed in Pelliconi, et al. II. However, this is the Examiner's initial burden to establish a *prima facie* case of obviousness.

Additionally, in the same vein as above, the Examiner has also

not explained *why*, absent Applicant's specification and currently pending claims, one of ordinary skill in the art would have selectively plucked the metallocene compounds of Winter, et al., in lieu of all the "other" catalysts one could have selected from Pelliconi, et al. II, to specifically produce component (c) as currently claimed by Applicant. However, as noted above, this is the Examiner's initial burden to establish a *prima facie* case of obviousness. See MPEP §2142. Accordingly, for the reasons outlined above, Applicant respectfully believes the instant rejection should be withdrawn.

However, notwithstanding all the arguments above, Applicant respectfully traverses the Examiner's contention that,

As Winter is explicitly cited, the examiner takes the position that it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify the polymer composition disclosed by Pelliconi by using the bridged bis-indenyl metallocene catalyst taught by Winter for the polymerization of the polymer components with the reasonable expectation of preparing a polymer composition having the balance of processability, mechanical properties, and optical properties disclosed by Pelliconi (Page 1, lines 6-8).

For the sake of argument, Applicant will assume for the discussion below that the Examiner's position above is correct, and that one of ordinary skill in the art would have modified the polyolefin compositions of Pelliconi, et al. II by using the bridged bis-indenyl metallocene catalysts disclosed in Winter, et al. (which Applicant respectfully denies; see arguments above). Even if one

were to make this incorrect assumption, one still would not have arrived at Applicant's currently claimed compositions.

As noted above, the currently claimed compositions unexpectedly have a better impact-stiffness balance since, in part, component (a), the propylene homopolymer or copolymer present from 50% to 90% by weight comprises, at the very least, a polydispersity index greater than 3. In particular, component (a) in the currently claimed propylene polymer compositions is produced using a Ziegler-Natta catalyst, which results in component (a) having a polydispersity index greater than 3, while component (b) is produced using a metallocene catalyst of formula (I)-(III), and as currently claimed, component (c) is produced using a metallocene catalyst of formula (I)-(II). Accordingly, even if one were to proceed as suggested by the Examiner by modifying Pelliconi, et al. II to use the metallocene catalysts of Winter, et al. to produce the components of the polymer composition of Pelliconi, et al. II (i.e., component (1) and component (2), which comprises copolymer (a) and copolymer (b)), one still would not arrive at the currently claimed propylene polymer compositions.

In fact, if one were to proceed as suggested by the Examiner and produce component (1) and copolymers (a) and (b) by using the metallocene catalysts of Winter, et al., Applicant believes one would arrive at compositions similar to Applicant's Comparative Examples. To elucidate this issue, as outlined in all thirteen (13)



examples in Winter, et al., the polymers produced using the metallocenes of Winter, et al. all have polydispersity indexes (i.e.,  $M_w/M_n$  values) less than 3. In fact, all the polydispersity indexes in the polymers produced in Winter, et al. range from 2.0-2.5. As discussed above and outlined in Applicant's specification in Table 1 and Table 3, if component (a) comprises a polydispersity index less than 3, the resultant compositions have a worse impact-stiffness balance. In particular, also as noted above, when component (a) is produced using a Ziegler-Natta catalyst, which results in component (a) having, at the very least, a polydispersity index greater than 3, while components (b) and (c) are produced using metallocene catalysts of formula (I)-(III) and (I)-(II), respectively, the resultant compositions unexpectedly have much higher Young modulus, chord modulus, Izod at -30 °C, and Izod at -40 °C values. Therefore, even if one would have proceeded as suggested by the Examiner and would have produced the components of the polyolefin compositions of Pelliconi, et al. II using the bridged metallocene catalysts of Winter, et al., which in any event Applicant denies one of ordinary skill in the art would have done, Applicant respectfully believes one still would not have arrived at Applicant's currently claimed propylene polymer compositions having an unexpectedly improved impact-stiffness balance. Therefore, for all the reasons outlined above, Applicant respectfully believes the instant rejection should be withdrawn.

In light of the above, Applicant respectfully believes claims 14-27 are patentably distinct over Pelliconi, et al. II in view of Winter, et al. As such, Applicant respectfully requests the Examiner to withdraw the current rejections.

### CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the prior art of record. The Examiner is therefore respectfully requested to reconsider and withdraw all pending rejections, and allow pending claims 14-27. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

In order to advance prosecution on the above-identified application, the Examiner is welcomed to telephone the undersigned practitioner if he has any questions or comments.

Respectfully submitted,

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U.S. Patent Application  
Serial No. 10/577,270

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June 30, 2009

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